Chapter 6

TACTICAL OPERATIONS

Section I. UNIT DISPLACEMENT

APPLICABILITY

This section covers unit displacement in the theater of operations. Unit displacement—leaving one place and going to another—is dictated by mission assignment. The unit may be relocated because it has completed its mission at its present location, or it may be relocated for better defense. For movement from CONUS to an overseas theater or from one overseas theater to another, see Appendix C.

PREPARATION

Preparation for company movement is a continuous process, beginning long before the unit receives a warning or movement order. The commander should start preparing the company for a move when he takes command. The commander reviews existing movement plans, SOPs, and loading plans to make sure they are complete and correct. If none exists, he prepares a movement plan with SOPs and loading plans. Personnel should be trained to follow the procedures the commander draws up. He should keep in mind that successful movement depends on effective planning as well as on unit readiness. When planning a movement, the battalion commander and leaders evaluate the risk and safety hazards before selecting a course of action that maximizes the operation and minimizes the risk.

Movement SOP

The movement SOP should cover routine aspects of displacement. In this way, the commander will not have to plan and issue separate directives for operations that follow a pattern. A movement SOP may include the following:

- Closedown procedures.
- Organization of march units.
- Organization and duties of quartering party, convoy advance party, rear party, and reconnaissance elements.
- Vehicle densities and speeds.
- Control measures.
- Actions to take in event of an enemy attack (including NBC).
- Procedures to follow in case of an accident.
- Maintenance, refueling, and feeding procedures to follow during halts.
- Communications methods and communications security.
- Personnel and equipment loads for organic vehicles.
- Movement training, including periodic rehearsals.

Displacement Plan

To ensure that closedown of the present site is as efficient as possible, the commander develops a displacement plan as part of the movement SOP and keeps it current. He should consider the experience of personnel as he plans. The following should be included for each operation:

- Order in which elements are to close down.
- Number of personnel required for closedown.
- Tasks each person performs.
- Estimated time required.

Loading Plans

The commander must prepare loading plans. Initial loading plans are based on authorized or prescribed personnel and equipment. The unit may have to make a shuttle move, so he should plan for multiple loads for vehicles. One plan should be made for each trip. The commander determines which elements of the company should move first and which can move later and updates the plans as needed.

- Initial. In developing loading plans, the commander considers the type of transportation, the number of personnel involved; and the type, size, weight, and quantity of supplies and equipment to be moved. Loading plans for vehicles should show the number of the vehicle (indicating its position in a convoy), the personnel to ride on the vehicle, and the equipment to be loaded on the truck or trailer. Loading diagrams for each vehicle show the positioning of personnel and equipment.

- Updated. When the commander receives a mission or movement order, he updates the loading plans, adding any mission-essential supplies and equipment. He prepares loading plans for any additional vehicles provided to assist the company in the move.

- Rehearsals. Periodic rehearsals should be conducted to make sure personnel are trained in the roles each will play during deployment. Rehearsals help the commander evaluate the unit's state of readiness and allow him a chance to adjust the movement plans.

RECONNAISSANCE

The first notice received from higher headquarters of an impending move is a warning order. It may be oral or written. It notifies the commander of the move, the general destination, and the probable route. After receiving the warning order, the commander organizes a reconnaissance party made up of some members from each company element to help survey the suggested route and the new area. If NBC weapons have been used in the area, the unit's NBC team should accompany the reconnaissance party, conduct an NBC reconnaissance en route and at the new site, and mark contaminated areas. See FMs 3-3 and 3-100 for procedures. Route reconnaissance provides current, accurate information on obstacles, road conditions, and critical terrain features along the march route. For more on route reconnaissance, see FM 5-36. Topographic units located at EAC or corps level can assist with route planning and terrain analysis. Site reconnaissance provides information to help find the best location for the battalion and its activities. When surveying the site, the commander gives first priority to the space and special terrain features needed for operations, as well as characteristics that determine how well the area can be defended. The three methods of reconnaissance are map, ground, and air. Table 6-1 outlines conditions to check when using these reconnaissance methods.

Table 6-1. Conditions to be Checked by Map, Ground, and Air Reconnaissance

CONDITIONS	ROUTE			SITE		
	MAP	GROUND	AIR	MAP	GROUND	AIR
Road surfaces	X	X	X	X	X	X
Railways			X	X	X	X
Obstacles	X	X	X	X	X	X
Waterways	X	X	X	X	X	X
Amount of available water				X	X	X
Condition and arrangement of available buildings					X	X
Types of terrain	X	X	X	X	X	X
Location of bypasses and detours	X	X	X			
Inclines and valleys	X	X	X	X	X	X
Cover and concealment		X	X		X	X
Bridge repair and construction requirements		X	X			
Enemy movements		X	X		X	X
Width of roads and trails		X	X		X	X
Critical points	X	X	X			
Distance between points	X	X	X			
Clearance and capacity for loads		X				
Facilities for refueling en route		X	X			
Location of bivouac sites and rest halts	X	X	X			
Best spots to station road guards		X				
Fording sites	X	X	X			
Contamination	X	X	X	X	X	X

Map

Maps should be used for all reconnaissance operations. Maps of the new area may be obtained from unclassified map (Class II) supply. When choosing the new location, the commander considers terrain features, roads, wooded areas, and waterways shown on the map. However, he keeps in mind that map reconnaissance is not always reliable; terrain features may have changed since the map was printed. For information on map reading, refer to FM 21-26.

Ground

When time and security permit, ground reconnaissance should follow map reconnaissance. This will help locate critical points along the route, such as structures or features that limit road width and overhead clearances. It will also help determine vehicle loads and will show features that interfere with the meeting or crossing of two or more lines of traffic. Odometer readings should be recorded at the beginning and end of the reconnaissance to measure the distance between the old and new areas. When conducting ground reconnaissance, the commander will need the following:

- Maps and photographs of the area.
- Binoculars.
- Compass.
- Copies of engineer route reconnaissance overlay, if available.

- Map overlay paper.
- Notebook and pencil.
- Frequency modulated radio (if authorized by MTOE).
- Radiological and chemical detection equipment.

Air

Aerial reconnaissance, if available, provides current information regarding the site. Aerial photographs may be used to supplement or replace ground reconnaissance.

SITE SELECTION

Site selection is an important and complicated process. After choosing the specific area for the unit, the commander must select an operating site for each unit element. On arrival at the general area designated by higher headquarters, the commander determines if the sites he has marked on the map have satisfactory terrain features. Specific features to look for in a site ~~are~~

- Location near a main supply route.
- Location near railways and waterways.
- Good roads to and within the site to support the movement of heavy, bulky equipment, to ease strain on vehicles, and to makeresupply and evacuation easier.
- Areas where heavy rains and flooding will not interfere with movement on roads.
- Areas away from landmarks that may be used by the enemy as reference points.
- Areas suitable for parking vehicles.
- Ease of defense, including positioning of weapons, building of obstacles, and using natural concealment.
- Existing communications that may be used.
- Available buildings that can be used after they are inspected and found safe. (Buildings should have enough entrances and exits for supply distribution. Floors should be sturdy enough to support the weight of stacked supplies and equipment.)
- Adequate space for all operations, including bivouac areas.
- The absence of environmentally sensitive areas, such as wetlands, seashores, or endangered species habitats.

The commander must keep in mind that field situations seldom allow the unit to operate under ideal conditions. Trade-offs may be necessary. When making trade-offs, the commander must consider the mission and the type and location of the enemy threat. In combat service support operations, site selection is determined for the most part by tactical considerations. The commander should select an alternative area in case the unit must move because of enemy action or the effect of weather on the terrain. Then he should select an operating site for each unit element. He considers the volume of traffic, needed space, and safety requirements. He then prepares an overlay of the preliminary layout for use by the unit and the quartering party and for submission to higher headquarters.

MOVEMENT

While waiting for the operation order to move, the commander reviews the movement plans and begins preparations.

Types

The manner in which the move to the new site is organized depends on the purpose of the move. The two principal types of movements are administrative and tactical. An administrative movement is one during which no enemy interference or contact is expected. Emphasis is on economy, including maximum use of unit transport capability. A tactical movement is one in which enemy interference or contact may occur. Emphasis is on successful accomplishment of the unit mission. Personnel, supplies, and equipment are loaded so that they may be unloaded easily, quickly, and in an order that allows the mission to resume without delay.

Operation Order

When the time or conditions under which the operation plan is to be placed in effect occur, the plan becomes an operation order. Refer to FM 101-5 for more information on operation plans and operation orders. Final preparations for movement begin when an operation order (either written or oral) is received from higher headquarters. It will give the specific destination and time of the move. Some operation orders outline every step of the move; others may only inform the commander that the unit is to move. In some cases the order may be oral. FRAGOs are issued to implement changes to the OPORD and annexes. A detailed operation order is in a five-paragraph format with annexes. It may include a strip map. See FM 101-5-1 for symbols used on strip maps. When the operation order is received, the commander and supervisory personnel should review loading and unloading procedures, compute or review external transportation requirements, and assign duties. The types of information to expect in a detailed operation order are—

Paragraphs covering—

- The situation (why the unit is moving).
- The mission (when and where it is moving).
- Execution (how to move).
- Service support during the move (food and fuel required).
- Command and signal (who is in charge).

Annexes giving details on—

- Convoy organization.
- Movement conduct.
- Checkpoints.

Strip map showing—

- Start and release points.
- Route numbers

- Place names.
- Critical points.
- Checkpoints.
- Directional arrows.
- Distances between points.
- Bivouac, rest, halt, and refueling areas.

Movement Order

On receipt of the operation order, the commander warns subordinates of the impending move so that they may begin preparations. The battalion S2/S3 section determines additional requirements for movement of subordinate units, selects tentative march routes, directs route reconnaissance activities, selects specific march routes, coordinates external movement support requirements, develops overall movement schemes for detachment headquarters and battalion move, and distributes movement order. The battalion S4 section coordinates internal support requirements for the move. After the battalion issues the movement order, the subordinate commander issues the company movement order (oral or written) with time of the move, destination, and policies and procedures to be followed by company personnel. It may include the same data and be in the same format as a detailed operation order. The commander briefs supervisory personnel on the movement order. They will then brief their personnel on specific roles in carrying out the order. Each driver should receive a copy of the strip map.

Liaison

The commander should stay in contact with personnel at higher headquarters, supported units, and units that support the unit as it prepares to move. He should—

- Meet with the higher headquarters S3 to update area maps, plan the move, and discuss convoy support and security force requirements.
- Submit requests for transportation, fuel, rations, and engineer, air, combat arms, maintenance, and recovery support.
- Obtain final highway clearances so as not to conflict with other traffic using the same route.
- Notify higher headquarters and supported units of the date and time of closedown at the old site and when he plans to begin operations at the new site. He does not have to give notice of date and time of closedown if a like unit will be moving into the old site.

Detached Parties

The commander must organize quartering, convoy advance, and rear parties.

Quartering. A quartering party is a group of unit representatives sent to a new site before the main body to secure, reconnoiter, and organize the area. Quartering party personnel should take with them individual field gear, rations, and weapons; engineer tape; area maps; compasses; guide signs; and materials for making and erecting signs. They should also take tools, NBC detection equipment, and a tactical radio. Duties of the quartering party are—

- Check the area for mines, boobytraps, trip flares, and NBC hazards.

- Set up outposts. This is the first step in setting up a unit defense. Refer to Section III for details. Priority for setting up sections should be in the SOP.

- Mark locations for the command post, motor pool, and latrines.

- Mark trails and locations of unit elements to help drivers of convoy trucks move to their locations without delay.

- Set up the command post.

- Lay communications wire from the command post to defense positions and supply areas.

- Prepare a kitchen area. Food service personnel should be in the quartering party so that a meal will be ready when the main body of the convoy arrives.

Convoy Advance. Personnel in the convoy advance party go ahead of the main convoy. They post guides along the selected route to help personnel find the new location.

Rear. The commander designates a rear party to stay behind and close out operations after the main body of personnel has begun to move to the new site. The rear party performs functions such as covering sumps and filling emplacements. It maintains communications with higher headquarters until the command post in the new area becomes operational.

ROAD MOVEMENT

In a theater of operations, the company usually moves by motor transportation. Even if air, rail, or water movement is used, the company moves by motor transportation to a railhead, airfield, or port. In many cases, the unit's move may be part of a move by a larger organization. Then the commander will be in charge of his unit's part of the convoy. If the company moves by itself, he will be in charge of the convoy. The commander must be thoroughly familiar with the road movement methods and procedures covered below.

Loading Procedures

The commander is responsible for supervising loading operations. It will be helpful to assign an NCO, such as the motor sergeant, or an officer to inspect the loading operations. Drivers are responsible for loading their trucks according to company loading plans and to the weight and dimensions specified on the vehicle data plate on the dashboard. For specific procedures on loading equipment, supplies, and troops, see FM 55-30.

Manifests

Each company element's leader prepares a manifest for that element and gives it to the commander before the convoy leaves. The commander needs a complete set of convoy manifests listing all personnel and equipment. These manifests give vehicle bumper numbers, names of drivers and assistant drivers, names of passengers, and types of cargo. The manifests should be checked when vehicles are in the assembly area so that any last minute changes can be made. Copies of the manifests should be sent to higher headquarters. The manifests can be attached as an annex to the movement order. They will help plan unloading operations at the new site. If there is an ambush or accident, the manifests will provide an accurate roster for taking a head count and reorganizing the march units.

Final Briefing

Before the convoy leaves the assembly point, the commander briefs all drivers, assistant drivers, and personnel. This briefing allows him to review main points of the planned movement along the selected route and allows him to inform personnel of any last minute changes. A list of topics to include ~~is~~

- Destination.
- Location of unloading sites.
- Route and rate of march.
- Start and release points.
- Vehicle gap.
- Checkpoints and critical points.
- Free-fire and no-fire zones.
- Location of security elements.
- Location of refueling points.
- Arrangements at destination.
- NBC defense.
- Contaminated areas, personnel, and equipment.
- Call signs and radio frequencies.

A recommended format for drafting the final briefing is in FM 55-30. Also helpful are the convoy commander's checklist and report formats in FM 55-30. After giving the final briefing, the commander has the convoy move to the starting point shown on the strip map given to each driver.

Control

Motor movements are controlled by effectively organizing and identifying convoy vehicles; coordinating communications; and setting march rate, movement method, checkpoints, halts, and procedures for maintenance operations. All of these should be covered in the movement order. The battalion S2/S3 section monitors the movement of subordinate companies and the battalion headquarters. They maintain communications with each subordinate element during movement. As they receive information on an element's movement and march progress, they annotate it on the situation map and movement graph. If there are any deviations from the movement order (for example, speed, interval, route adjustments, or increased MOPP level), the S2/S3 section provides corrective action. Current movement status and a final movement report are provided to the battalion commander and petroleum group S2/S3 (or higher headquarters) when received from subordinate elements.

- Organization. The convoy command vehicle should be at the front of the convoy. Vehicles carrying company personnel and equipment that will be needed first at the new site should come next. The slowest vehicle should be near the front to help keep the convoy together.

- Vehicle Flags. Flags 12 inches high and 18 inches long should mark each serial in the convoy. The lead vehicle in each serial will display a blue flag; the rear vehicle, a green flag. If the convoy moves at night, blue and green lights are used in place of flags. The command vehicle and each serial commander's vehicle will display a flag divided on the diagonal to show white and black triangles. The flag is mounted on the left side of the vehicle at the front or rear. It should not interfere with the driver's vision or with the lights or any other working part of the vehicle.

- Vehicle Numbers. The convoy clearance number should be on both sides of each vehicle and on the front of each if there is room. It should also be on the hood of the lead and trail vehicles of each serial. This will help friendly forces recognize the vehicles from the air.

- Communications. The commander establishes the communications methods and security to be used during motor movement. For more information on communications, see Section II.

- March Rate. Convoy speed depends on road and traffic conditions, drivers' experience, and the slowest vehicle's speed. On a long move over rough highways, speed should not exceed 15-20 mph with a catch-up speed of no more than 25-30 mph.

- Movement Methods. The three basic methods of movement are close column, open column, and infiltration. The difference between them is based on the distance or gap between vehicles. With the close column and open column methods, there is a uniform distance between vehicles. With the infiltration method, vehicles are usually sent one by one, in small groups, or at irregular intervals. Vehicles are sent at a rate that keeps the traffic density down and keeps vehicles from bunching together. The convoy commander must decide which method is best for his situation. See the table, "Types of Column Formations," in FM 55-30 for guidance. As each vehicle passes the designated starting point, it should be traveling at the correct speed and with the correct distance between it and the preceding vehicle. For details on plotting a move using distance and time factors, see FM 55-30.

- Checkpoints. Checkpoints along the route help control convoy movement. When the commander reaches each checkpoint, he notifies higher headquarters by radio. If he must halt the convoy, the checkpoints serve as reference points to report the convoy's location.

- Halts. Halts during the move should be planned. They should occur every two hours for ten minutes. Longer halts should be planned to eat, refuel, and bivouac. As a rule, all vehicles in the convoy will halt at the same time to keep vehicle gaps unchanged. Most of the vehicles can travel 300 miles before refueling. If refueling is required during the move, it should occur during a halt.

- Maintenance. Vehicle maintenance takes place during a halt if time permits. Drivers inspect their vehicles and do both unit and operator maintenance.

Night Movement

Several factors must be considered when the company moves at night: rate of march, vehicle density, and light discipline. The commander instructs officers and NCOs on safety precautions to be followed in a night move. Refer to FM 55-30 for more information on night convoys, including their advantages and disadvantages. The commander chooses the lighting best suited to the move from the following three basic types:

- Normal Lighting. Normal lighting is the lighting prescribed by the law of the country the unit is in. RAWLs (red amber warning lights) should be used on vehicles with hazardous cargo IAW local law and SOP.

- Reduced Lighting. Reduced lighting is the decreasing of the brightness of all interior and exterior lights. This is done either by cutting the power to the lights or by screening them.

- Blackout Blackout can mean either no lights at all or using only blackout lights.

Vehicle Security Preparations

Vehicles must be prepared for possible attack. This should be done by preparing windshields and hardening vehicles. Tarpaulins and cab tops can be used to improve security.

Preparing Windshields. Higher headquarters may dictate how to position the windshields. If not, the commander considers the following when deciding whether to remove, lower, or leave the windshields in place. Windshields left

in place protect against dust and heavy rain. Chicken wire may be connected to the raised windshield and stretched across the windows to protect troops in the vehicle from incoming grenades. Windshields in place may protect troops in the vehicle from wires stretched across the road. Windshields should be lowered or removed during blackout operations or when they get in the way of weapons being used. A piece of plywood or similar material covered with sandbags should be placed between a lowered windshield and the hood to prevent glass breakage from shock vibration.

Hardening Vehicles. Floors of troop-carrying vehicles should be covered with at least one double interlocking layer of sandbags. A double layer of sandbags should be placed under the driver's seat of all vehicles. Sandbags will last longer if covered with a mat. Sandbags may also be placed on the gas tank, fenders, and hood. The windows of trucks can be removed and the doors filled with sand. Note that hardening of HMMWVs can cause damage to the axle because of additional weight. The maintenance technician should be consulted for the proper procedures before hardeningHMMWVs.

Using Tarpaulins and Cab Tops. In most cases, the commander decides whether or not to use tarpaulins, canvas truck tops, and cab tops. Before making a decision, he should consider the advantages and disadvantages. The main advantage in covering a shipment is that it is harder for an ambush force to identify prime targets such as ammunition and fuel. The disadvantage in using the truck top or tarpaulin is that it must be removed to load and unload the truck. Sometimes, a truck top will block the driver's vision to the rear and a security guard's fire to the rear. This is a serious disadvantage when the convoy is under attack. By leaving the cab top on vehicles loaded with fuel, some protection is given the driver if a fuel tank is hit by fire. If cargo will be damaged by bad weather, it should be covered.

Defense

Because a convoy offers a good target for the enemy, a well-planned defense is essential. The defense principles described in Section III and in FM 55-30 should be used. FM 55-30 provides good coverage of active and passive convoy defense measures. The commander decides how much and what kind of security support he needs. Depending on the expected hostile threat, he may get support from his own unit or others. When outside support is needed, it must be coordinated closely with the security force. Security support from another unit must be requested from higher headquarters.

Military Police Support. MP convoy security support may be either full-time or on a mission basis (as required). MP commanders are responsible for coordinating convoy security operations within their area of responsibility.

Area Support. The commander of an area where the convoy is operating may be assigned to protect the convoy within the area. Escort, artillery support, and air cover, in any combination, may be provided.

Unit Internal Support. The convoy may have to provide its own security support (hardened vehicles, shotgun riders, or fire teams). The commander should remember that, with limited troops and vehicles, too many security measures may hurt the unit's mission capability.

Covering Force. The covering force travels well forward of the main convoy to trigger any ambush. When attacked, the force reacts by trying to defeat the ambush force or to deceive, delay, and disorganize enemy forces until the main force can prepare for action. The covering force travels ahead of the advance guard of the convoy and provides its own security. The covering force will probably come from outside the unit because of its limited personnel and vehicles.

Guard Groups. An advance guard, flank guards, and a rear guard should protect the convoy. Their size, makeup, and position in relation to the convoy will vary with mission, terrain, and tactical situation. The advance guard prevents delay of the main convoy and protects against surprise attack. Flank guards cover routes that might be used by the enemy to attack the column flanks. The flank guards try to drive off ambush forces and warn of approaching larger enemy forces. Usually, flank guards come from outside the company. The rear guard follows and

protects the main body of the march, defeating or delaying hostile forces attacking from the rear, protecting the trains, and collecting stragglers.

Mines and Boobytraps. Mines and boobytraps are frequently used by ambush forces. Command-detonated mines are often used to start an ambush. Mines will also be planted along the shoulder of the road for harassment and interdiction. A boobytrap system may be used against personnel in vehicles and could consist of hand grenades attached to tree branches over the road where antennas or other projections from vehicles will snag and detonate them. Claymore mines or artillery shells may be suspended from trees to be command-detonated when a vehicle passes. To decrease mine damage, drivers should track the vehicles in front of them and avoid driving on the road shoulders. Damage from mines and boobytraps can be lessened by hardening vehicles and requiring troops to wear protective equipment.

Destruction. When a vehicle breaks down, it may be necessary to destroy it so that the enemy cannot use it. For more information on vehicle destruction, see vehicle technical manuals.

MOVEMENT BY AIR, RAIL, OR WATER

Besides road movement, units may move by air, rail, and water.

Air

As a rule, tactical airlift of military units is ordered by the headquarters commanding both the transported and transporting units. The commander of the Air Force or aviation unit specifies the cargo load allowed for the type of aircraft used. See FM 100-27 for procedures for requesting USAF tactical airlift support. Refer to TM 38-250 for preparing hazardous material for military air shipment. The two methods of loading are internal and external.

Internal Loading. Loading plans will vary according to factors such as the tactical conditions of the flight, the security of the landing area, the time available for disassembly and assembly of equipment, and the amount of supplies to be transported. Helicopter internal load operations are given in detail in FM 55-450-2.

- External Loading. Sling loading is a useful, practical, and routine transport mode for all units. Detailed coverage of helicopter external load operations is in FMs 55-450-3, -4, and -5. Unit personnel must be selected and trained as ground crews. They will be responsible for rigging all TOE equipment. The unit is responsible for providing its external loading equipment. The unit's equipment and material should be inventoried by each platoon, section, or crew to determine what is needed to rig the loads. The number of slings and other required equipment should be requisitioned. Stock numbers and nomenclature of air delivery equipment and slings are found in FMs 55-450-3, -4, and -5 and in TM 10-1670-298-20&P. Company SOPs should contain rigging and loading plans to assist the ground crews. This will help prevent confusion at a time when speed and control are necessary.

Rail

During training and preparing for movement by rail, unit personnel must become familiar with procedures for packing, boxing, and crating organic equipment. They must learn how to load equipment and personnel on railway cars. The commander prepares a loading plan and keeps it current. Information on procedures for unit movement by rail will be provided by the area transportation movement office. Details on rail movements are in FM 55-20 and FM 101-10-1/1.

Water

For water movement, equipment must be waterproofed, packed, crated, and marked. Personnel must be trained in embarkation, debarkation, and shipboard procedures. Destination, anticipated use, available shipping space, and type of vessel are factors to consider. Instructions based on movement requirements are provided by the transportation movement officer or local transportation officer. Details on water movements are in FM 55-50 and FM 101-10-1/1.

SITE OCCUPATION

As the unit approaches the new site, members of the quartering party should meet it at the release point designated on the strip map. Quartering party members should lead unit elements to their new operating sites. Cross-country routes are marked at the release point to help vehicle drivers reach their areas quickly. When organizational elements arrive at their operating sites, they should begin at once to unload and set up operations.

Company Layout

Suggested company layouts are discussed in Chapter 4. Supervisors must ensure that individual operating sites are set up for ease of operations.

Perimeter Development

One of the most important steps in site setup is perimeter development. After the commander sets up the defense, unit personnel should be able to provide 360-degree coverage of the area.

Command Linkup

The commander informs higher headquarters at once when sites have been set up for all unit elements and the company is ready to start operations. The report should include encoded map coordinates of all operating sites, the administrative and operational condition of the company, and what time the unit will start operations.

Section II. COMMUNICATIONS

ASSETS AND SERVICES

Communications help to support unit missions, to carry out administrative duties, to maintain contact with higher headquarters, to transmit tactical information, and to defend the unit. The commander must set up communications with all elements. Their personnel must communicate with higher headquarters, supported units, and internal elements. Communications help may be needed in setting up an adequate system. Assistance can usually be obtained from the COSCOM or EAC in which the unit is operating, from the battalion headquarters company of subordinate units, or from the headquarters detachment of a petroleum group.

Assets

Authorized communications equipment includes the AN/PRC-114/VRC-87/88/89-series radios and the AN/VRC-97 MSE. The AN/GRA-39 radio set control group is maintained at battalion level. See Appendix A for data on this equipment. The commander is responsible for allocating these communications assets. Equipment should be allocated as needed to perform the mission. For example, in a tactical situation observation posts (OPs) or listening posts (LPs) might have priority on phones. Another source of communications would be the MP security company, if attached to the petroleum group. It has organic communications equipment mounted on each of its vehicles.

Services

Communications services will differ depending on the area or zone in which the unit operates. Services are provided in both the COMMZ and the corps area.

- In COMMZ. Because the unit will be deployed throughout the COMMZ, it will need outside help to set up a communications system. This assistance comes from signal organizations of the communications command in EAC.

These signal units install, operate, and maintain a network of area signal centers in the COMMZ. Trunking systems connect the centers. The centers should be used to supplement organic communications to higher, subordinate, or nearby units.

- In Corps. The corps communications system operates in the combat zone and provides communications for corps units. It is an integrated system with a single-channel command radio and multichannel facilities to provide service on both command and area bases. Direct links go from corps main command post to assigned divisions and selected subordinate units. The area communications system links to the command system. The area system has area signal centers (nodes) situated to provide corpswide access. The corps system links to the communications system of the EAC and to adjacent corps and divisions.

METHODS

There are many different communication methods. The commander should use those that offer maximum reliability, flexibility, security, and speed with a minimum of effort and material. He should not depend on one method but should use methods that complement each other. Signal equipment (particularly when connected to cables or antennas) can be damaged by electromagnetic pulse. Alternative means of communication should always be available in the event of nuclear warfare. Refer to FM 24-1 for more information.

Wire and Cable

Wire systems use field wire and cable, telephones, and a switchboard to provide person-to-person conversations. Wire is more secure than radio. If radio links are used, the enemy can intercept telephone conversations. Personnel should know this and practice communications security. The unit SOP should cover security; it should include details of the telephone system, priorities for laying wire, and responsibilities for setting up the system. The wire system shown in Figure 6-1,page 6-14, supports the company headquarters. The wire installer installs and operates it. The command post uses this system to provide internal communication 24 hours a day. Figure 6-2, page 6-15, shows the wire net of a supply platoon when each platoon operates at a separate location. See TC 24-20 for information on field wire activities and the general characteristics of equipment used with field wire systems.

Radio

The allocation of radio equipment should be documented in the SOP. A proposed unit radio net is shown in Figure 6-3, page 6-16. Radio is one of the most versatile methods of communication. Since it is wireless, it can operate while the unit is mobile. It can handle large volumes of traffic. Radio is the commander's main method of communication with unit elements too far away for contact by local telephone. However, radio is the least secure communications method. Radio communication is subject to jamming and interception, deception, and interference. Radios can be severely damaged by the electromagnetic pulse resulting from a nuclear detonation. During the blackout (ionization of the atmosphere) following detonation, radio transmissions will be impossible. If the unit is in, or expects to be in, a nuclear environment, measures must be taken to protect its radios. For more information, refer to FM 25-50. The unit SOP should contain both security and protective measures. When setting up operating sites, personnel should enter the net using procedures in FM 24-18.

Automation

Automation involves methods of sending, receiving, processing, or storing information by an automated capability (such as computers). An automated capability can process large volumes of information and provide real-time delivery. Automation is easily secured and provides speed, accuracy, improved text and video display, and programmable output and formats. However, it requires a manual system for backup and is susceptible to electromagnetic pulse, power fluctuations, induced viruses, and magnetic disturbances.

Manual

The manual method consists of sending, receiving, or storing documents by physical capabilities, without using electronic media. This method includes messengers and a records management system. The method is reliable and flexible and uses assets found in every unit. It is also the most secure means available. The records management system provides a backup for data storage. However, the method requires a large amount of space and is manpower-intensive. The messenger, when used, is subject to enemy intervention as well as constraints of weather, terrain, and time.

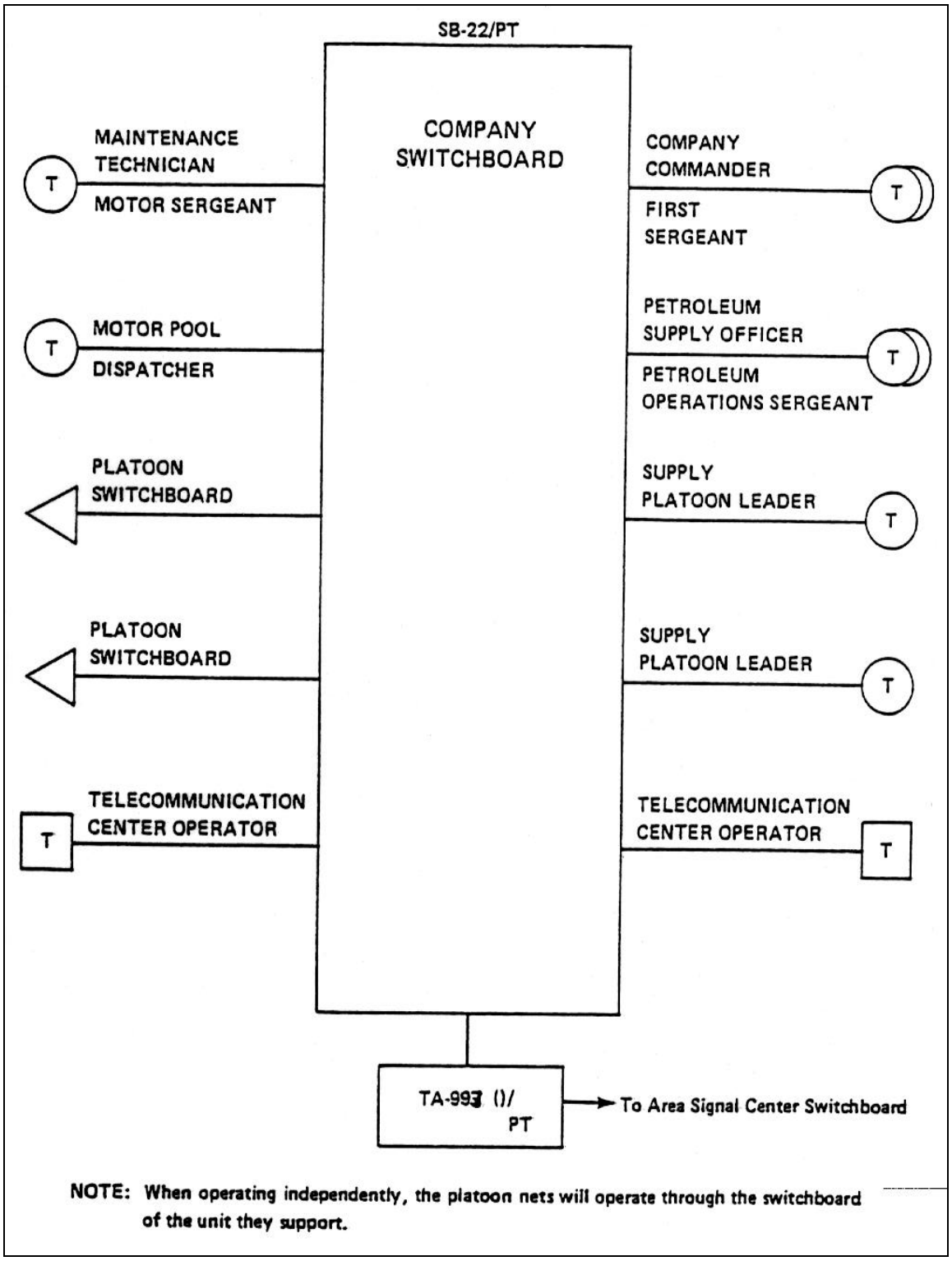

Figure 6-1. Organic wire net for a petroleum supply company

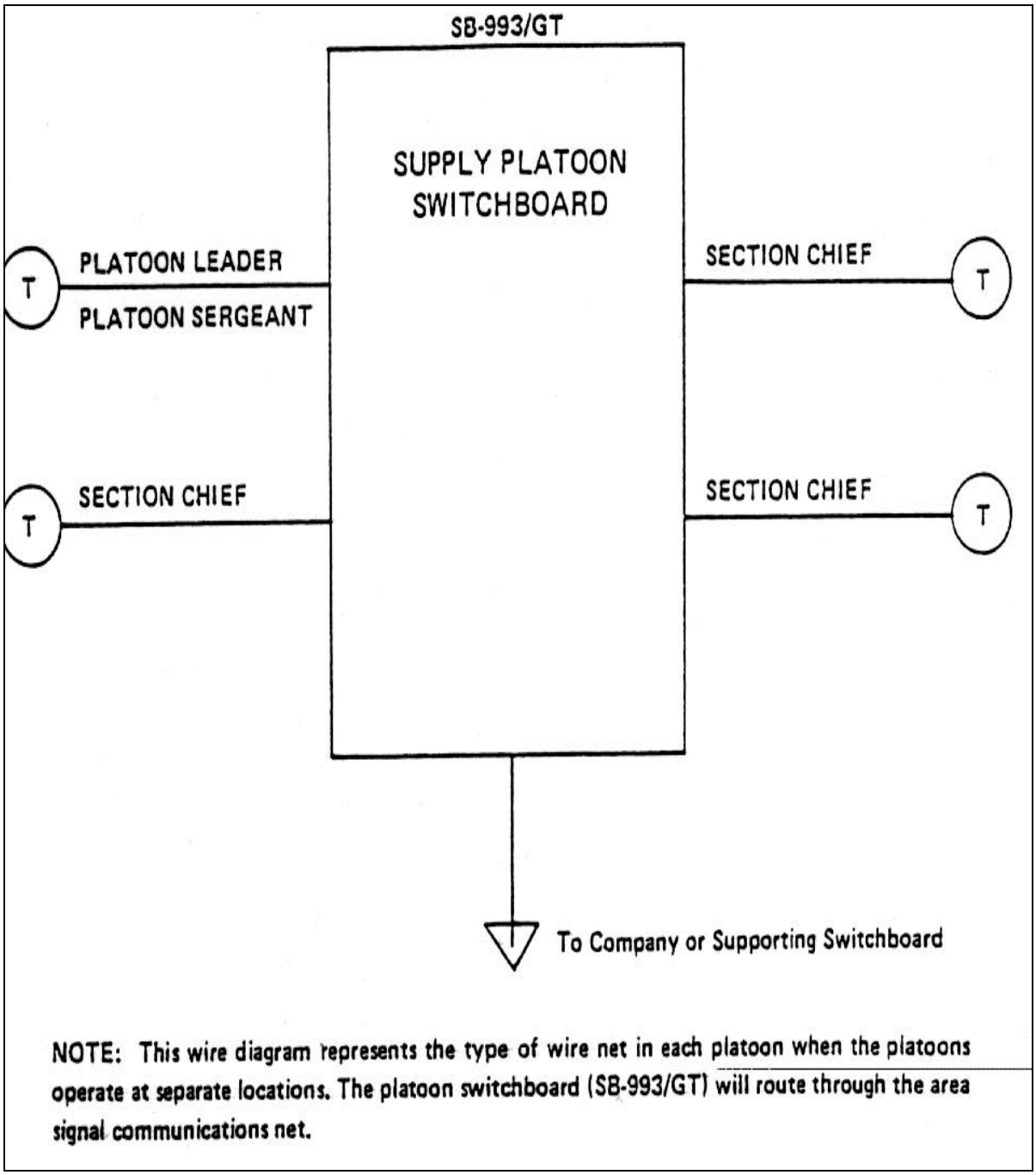

Figure 6-2. Wire net of the supply platoon

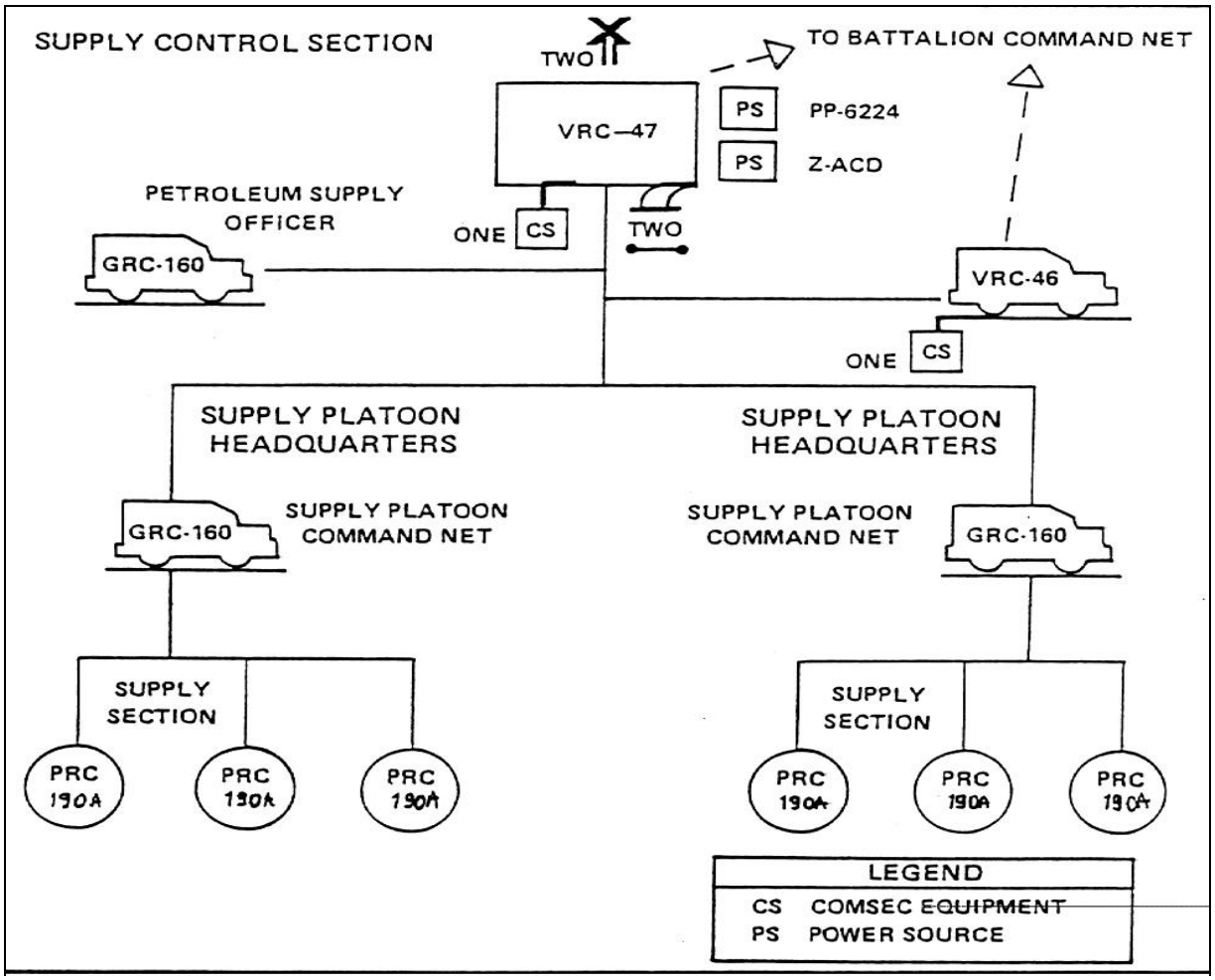

Figure 6-3. Proposed radio net for a petroleum supply company

Visual and Sound Signals

Visual and sound signals are used to send messages over short distances. These signals are most useful during periods of radio silence. They are used as alarms or warnings, especially of enemy attack, or as a means of sending prearranged messages. Messages transmitted by visual or sound signal are easily misunderstood; therefore, care must be taken in the selection of the means and the message to be conveyed. Messages transmitted by this means should be few, prearranged, and simple. Visual signals include road signs, flags, lights, panels, arm and hand signals, and pyrotechnics. Sound signals include horns, bells, whistles, weapons fire, and sirens.

SECURITY

Communications security consists of measures to keep unauthorized persons from getting information from the communications system. Personnel should understand and observe the COMSEC measures described in AR 380-40. Two measures they should practice are transmission security and physical security.

Transmission

All transmissions are governed by the signal operation instructions (SOI). SOI is a series of orders issued for technical control and coordination of signal support activities for a command. As a rule, the commander receives only an extract of an SOI, that part necessary to manage the unit's nets. Among other things, the SOI may provide a list of essential elements of friendly information (EEFI) that must not be transmitted. Operators will have a copy of

this list. They should monitor transmissions to see if information on the list is being passed. Other ways for making transmissions more secure are—

- Choose a means of communication according to the urgency of the situation. Use the most secure means to send a message.
- Transmit only when necessary.
- Use low transmitting power when possible.
- Be wary if a radio station's signal strength suddenly changes.
- Plan the message. Keep it as short as possible.
- Cut out unnecessary talk. Maintain communication silence as much as possible.
- Use only authorized codes and ciphers.
- Avoid identifying yourself or others.
- Demand authentication. Do not talk to anyone who will not authenticate.

Physical

Operators should be impressed with the need to protect communications equipment from abuse, damage, or capture. They should guard against disclosing the location of equipment. Phone wires should be put inside the defensive perimeter and along frequently traveled routes. Burying wires and cables whenever possible will protect them against electromagnetic pulse. Proper grounding will also protect electronic equipment during nuclear attack. Radios should be put in well defended locations. Operators should move transmitters frequently. The commander should be sure to rotate operators so that an enemy will not associate an operator with a specific unit or operation.

UNWANTED SIGNALS

Radio reception may be hindered, confused, or prevented by unwanted signals. These signals may be unintentional (from friendly or natural sources) or intentional (from unfriendly sources). Unwanted signals should be reported according to SOI supplemental instructions. Before reporting an unwanted signal, the operator should disconnect the receiving antenna to determine whether or not the signal is from an outside source. The operator should follow the procedures in FM 24-33 to determine the nature of the unwanted signal.

Unintentional

Electromagnetic signals caused by sources other than the enemy may interfere with radio reception. These sources include friendly radio signals, faulty electrical components, weather conditions, and nearby generators. This type of unwanted signal is caused by interference.

Intentional

Electronic devices provide ways for the enemy to operate against the unit in combat situations. Through electronic warfare, the enemy attempts to monitor and break up unit communications. The intentional unwanted signals most often encountered include deception, jamming, and squelch capture.

- Deception. Deception is the entrance of false or altered information into friendly signal paths so that operators react to it. The enemy may try to enter the communications system by imitating a friendly unit or station to get or give information that could affect an operation. Operators need training to counter deception by using correct

operation codes, brevity lists, and operating signals. They should require authentication and observe transmission security.

- Jamming. Jamming is a deliberate effort to prevent the passage of information or to degrade reception. It can disrupt a single frequency or a frequency spectrum. All radio frequencies can be jammed. An operator who hears an unusual noise on the radio must try to determine its source. If it cannot be traced to a friendly source, the radio is probably being jammed. The operator should try to identify the kind of noise and report it. Under no circumstances should the operator let the enemy know that jamming efforts are successful. Antijamming measures and techniques are described in FM 24-33, Chapter 3.

Reports

An operator who suspects interference should notify the commander immediately. The operator should make a report according to SOI supplemental instructions and in the format shown in FM 24-1. The report should be made whether or not the operator is successful in working through the interference. After reviewing the report, the commander sends it to higher headquarters as required by the SOI.

Section III. BASE DEFENSE OPERATIONS

COMMAND RESPONSIBILITIES

A base or base cluster commander is responsible for the internal defense of the base or cluster. The unit commander will be a base commander, or if more than one unit is present in the base, the senior unit commander will be a base commander. Commanders of an independent or isolated base will report directly to the rear area operations center (RAOC). The objective is to form a base defense perimeter to defend against enemy attack. The base or base cluster commander prepares, plans, and supervises an internal defense that ensures the protection of personnel, equipment, and resources from enemy attack. When assets permit, the commander develops a response force to augment the defensive posture of the base or base cluster. The company's responsibilities as part of the base defense force will be designated by the base or base cluster commander.

BASE/BASE CLUSTER

The unit must be capable of protecting itself against a Level I enemy incursion. Because the unit is not trained or equipped to conduct a sustained defense against Level II and Level III attacks, it will normally be grouped with combat support and other combat service support units into a base for defense operations. (All units in the rear area will be assigned to a base or will establish a base.) The base enhances each unit's defense as well as that of joint support combat forces. The base is a geographically small, defendable unit or multiunit position with a defined perimeter and established access control. Army, other services, or host nation units may make up a base. Combat support and combat service support bases in the rear, grouped together for the rear battle or mission-related purposes, form base clusters. A base cluster has no clearly defined perimeter. The division rear battle officer will usually propose bases/base clusters and designate their commanders. (The unit commander may be designated as a base commander.) The rear battle officer also establishes the rear area operations center for control, planning, and staff coordination of the rear battle throughout the division rear area. The center provides assistance to all base commanders for base defense, for MP interface with base forces, and for supporting direct and indirect fire.

THREAT

A major element of threat doctrine is the disruption of the rear areas. This reduces efficiency of operations and support to the main battle area. The three levels of enemy threat activity are shown in Table 6-2. Threat activity will not occur in a specific order. The unit may face one or all actions at a time. In some cases, Level I or Level II activities will be conducted to support a Level III incursion or a major attack occurring in the main battle area. Some activity may take place well ahead of hostilities, including a terrorist attack against key personnel and activities.

Table 6-2. Levels of Enemy Threat Activity

LEVEL	TYPE OF ACTIVITY
Level I	• Activity by enemy controlled agents. • Sabotage by enemy sympathizers. • Terrorism.
Level II	• Diversionary and sabotage operations conducted by unconventional forces. • Raid, ambush, and reconnaissance operations conducted by combat units. • Special missions or unconventional warfare (UW) missions.
Level III (battalion-sized or larger)	• Heliborne operations. • Airborne operations. • Amphibious operations. • Ground force deliberate operations. • Infiltration operations.

AIR-LAND BATTLE

Air-land battle fundamentals provide the basis for fighting the rear battle (see FM 100-5). CSS companies can support the battle by—

- Ensuring continuing logistical support.
- Being prepared to shift support to different user units, without interruption, when directed by higher headquarters.
- Reacting to any rear area threat.
- Sustaining combat service support forward.

COMPONENTS

An effective base defense system must include procedures for detection, delay, and destruction. These areas are described more fully below.

Detection

Detection efforts include using day and night observation devices, MP and counterintelligence information, and chemical or radiological monitoring devices. Also included are warning systems and procedures to notify all personnel of various alert postures.

Delay

After detection and warning, the attackers' progress must be sufficiently hindered to permit base defense forces to respond. Delay measures include minesþoobytraps, obstacles, and barriers.

Destruction

Following detection and delay, the enemy force must be destroyed. If the threat exceeds available base assets, preplanned delay measures may be seriously tested until additional forces arrive to destroy the threat.

PREPARATION

The following steps can reduce the chances of being attacked.

Plans

The commander plans the defense of a new area before the company moves. He asks the higher headquarters S2/S3 for information on the threat from opposing forces in the new area if the unit is part of a base or base cluster. He obtains data on terrain or natural obstacles that may be used to camouflage or conceal operations. The commander performs a reconnaissance of the new area, sketching the area on a map and laying out a tentative defense plan. He requests the additional supplies needed for obstacles and camouflage as well as additional ammunition, if necessary. He instructs personnel on the effective execution of the defense plan.

Layout

The advance party will have already started work on defense measures such as barriers and camouflage. As the battalion moves into the area, the commander continues to develop the defense. When the defense is set up, he makes a detailed sketch and an artillery fire plan. These are sent by secure means to the battalion S2/S3 and/or base cluster commander within two hours after the battalion reaches the area. The sketch should give correct map coordinates (encoded for security) so that the location can be posted to a tactical map at battalion and higher headquarters. The sketch should be drawn as close to scale as possible, using correct military symbols and graphics (see FM 101-5-1).

Camouflage, Cover, and Concealment

The commander directs soldiers to camouflage and conceal their areas and equipment as they set up operations. They should take full advantage of natural terrain. The commander should stress that survival of the company depends on every soldier not being seen by the enemy. See Table 6-3 for camouflage ideas. Information on camouflage, cover, and concealment is also contained in FM 20-3.

Dispersion

Operations should be spread so that they are not all in one small area. Class III supplies should be kept away from other supplies. If possible, Class V supplies should be kept at least 180 meters from other supplies. This makes it harder for the enemy to destroy all the unit's supplies in one strike. As the unit disperses, security problems increase. This dilemma must be resolved based on estimations of optimal dispersion. Higher headquarters should have a dispersion information plan to help resolve the problem. The commander should spread out the unit as much as possible. The unit must still be able to perform the mission; dispersion is secondary to mission accomplishment.

Light and Noise Discipline

Light and noise discipline are important in maintaining good defense. Troops should be trained to work quietly and with little or no light.

- Light. The only safe time to issue and receive supplies may be at night. Night operations are slower and more difficult than daylight operations, especially during a blackout. Materials-handling equipment is almost impossible to use. Troops should be trained to work in the dark. Everyone who needs one should have a flashlight. Flashlights should have appropriately colored and filtered lights. Tents or buildings should be used for operations if possible.

- Noise. Noise discipline is a defense against any attack. The more quietly soldiers work, the less they reveal about the company's position, especially to an enemy who is more familiar with the terrain than they are. They should also be able to direct trucks using flashlight signals or voice commands. For more details on signals, see FM 21-60.

Table 6-3. Ideas for Camouflage and Concealment

PEOPLE
• Use camouflage paint sticks on the face, neck, and hands. Anyone who is allergic to the paint should use mud or grease. • Wear camouflage clothing. • Make sure web equipment blends in. Paint it or use mud if you have to. • Wear a camouflage cover on your helmet. Put leaves and branches in the slits or under the band. Change the leaves and branches at least once a day. • Wear no shiny jewelry. • Camouflage bootswith mud, if necessary.
WEAPONS
• Wrap weapons with strips of cloth that match the color of plants in the area. • Make sure you do not interfere with the works of the weapon when you camouflage it.
TENTS
• Darken faded canvas with mud or charcoal.
OPERATIONS AREA
• Have a traffic plan. Foot troops must use paths. They must not take shortcuts. • Trucks should use marked roads and turns. They must not use shortcuts.
VEHICLES
• Make sure bumper markings, unit identification, and other white markings have been blackened out or are in subdued colors. • Cover headlights, except blackout lights. • Fold down and cover the windshield, if you can. • Hide trucks under the eaves of the buildings or in the woods. Cover them with netting when they are stopped for more than a few minutes. Use natural camouflage as much as possible. • Use pattern painting on trucks and equipment. Use only approved patterns. • Camouflage moving vehicles with foliage as long as it does not interfere with the driver's vision.
FIGHTING POSITIONS
• Arrange natural material around the position to match the surrounding terrain. • Use only as much brush as needed for concealment. A pile of bushes in the middle of a bare place can be a giveaway. • Hide the soil taken from foxholes. Spread it around the area. Do not leave the soil piled up near the position.

Alarm Systems

The alarm system can warn (first stage alarm) unit personnel that an attack is imminent. Ideally, the unit's defense plan should allow increases in perimeter defense while continuing support missions. The company should be trained to respond appropriately. However, when attack is imminent, all personnel stop their normal duties and take defensive positions. The commander's first responsibility is to secure the unit. If he cannot defend against enemy activity, military police will support him. The commander coordinates with the higher headquarters and the base commander, as appropriate.

NUCLEAR, BIOLOGICAL, AND CHEMICAL OPERATIONS

The enemy has the means to conduct operations involving NBC weapons and can be expected to incorporate them into any battlefield scenario. When this happens, the company must be able to survive an attack and continue its mission in a contaminated environment. AR 350-41 establishes the requirement for unit NBC defense teams. One platoon should be given responsibility for the defense team. The commander chooses an officer, an NCO, and an enlisted alternate to lead and train the team. If one section has the mission, it can execute the NBC tasks in a much more timely manner. The team should be trained to decontaminate troops and equipment, do radiological monitoring and survey, and detect chemical attacks. Since the unit has radiation detection and survey equipment, AR 350-41

also requires the commander to appoint at least one survey party for each item of equipment. Each party should have at least two soldiers. Other officers and NCOs must know and be able to apply all the principles of NBC defense as outlined in FM 3-100. For techniques on mitigating the effects of an NBC attack (before, during, and after the attack), see FM 3-4, Chapters 3 through 5.

Nuclear Defense

The conduct of post-nuclear defense operations will require soldiers to operate in a contaminated environment. To reduce the effects of these hazards, soldiers must know what to do.

- Before Attack. The best defense is to dig in. If they have not already done so, soldiers should prepare foxholes or shelters for protection. Deeply dug foxholes give good protection against initial and residual radiation. Dirt is a good shielding material. Caves, tunnels, or storm drains should also be used. They provide good shelter when there are no cave-ins that would allow radiation to enter. Usually, buildings do not provide adequate protection. The basement of a concrete or steel-framed building can be used, but windows and other openings should be avoided. Doors, windows, and vents should be kept closed at all times. Clothing, equipment, and other items should be kept in the foxhole or wherever soldiers are sheltered. Tying down items will keep them from becoming lethal missiles during the blast wave. Ammunition and other explosives should be dispersed. All equipment should be turned off, and power, communications, and antenna cables disconnected. Grounding cables should remain connected to equipment.

- During Attack. Soldiers need training to act without hesitation. As a rule, a nuclear attack will be a surprise. The first sign is a flash. If a flash occurs, soldiers should drop to the ground or to the bottom of a foxhole, facing away from the flash. They should close their eyes, place their hands and arms near or under their bodies, and keep helmets on to protect exposed skin from the heat. Soldiers should count the flash-to-bang time for NBC-1 reporting purposes. Once the burst is heard, falling debris and radiation follow. To minimize casualties from heat and flying debris, soldiers should stay down until the blast wave has passed and returned and debris has stopped falling.

- After Attack. The commander reports the attack to the battalion S2/S3. FM 3-100 gives the standard format for reporting NBC threats or attacks. The battalion SOP should have instructions for the commander's use. Table 6-4 shows the reports he is responsible for. The commander will have to check on personnel and equipment, prepare for fallout, and avoid contamination.

Table 6-4. NBC Reports

LEVEL	USE
NBC-1	To report initial and subsequent data on an attack. Send this report to the battalion S2/S3.
NBC-2	To pass evaluated data of an NBC attack to a higher command. The S2/S3 sends this report to the DISCOM or to the NBC control element.
NBC-3	For immediate warning of expected contamination. The S2/S3 receives this report from DISCOM or the NBC element and gives the data to the commander and other unit commanders.
NBC-4	For reporting radiation dose rate measurements. If the commander is in charge of the monitoring teams in his area, he will send this report to the S2/S3.
NBC-5	To locate areas of radiological, biological, or chemical contamination or hazards. The S2/S3 receives this report from DISCOM or the NBC element.
NBC-6	To summarize information concerning a chemical or biological attack.

Check on personnel and equipment

The most common injuries will usually be burns, fractures, and cuts. The commander directs personnel to give first aid to the wounded. If time and conditions permit, the remains of soldiers killed in the attack are recovered and sent to the mortuary affairs collection point. Unit equipment should be located and organized so that the mission can continue. If feasible, personnel should repair and reinforce their positions to improve protection from fallout.

Prepare for fallout

Timely warning should be given to protect personnel and equipment from radiation. The S2/S3 should receive an NBC-3 report from higher headquarters warning that fallout is expected. Soldiers should start monitoring the area. At least two people should be trained to operate each radiac instrument. Soldiers should prepare and improve shelters if needed, cover equipment, and place water, rations, and individual equipment in covered foxholes or other protected areas. Soldiers may need to put on protective clothing.

NOTE: MOPP gear will not protect against the initial nuclear radiation. Neither will it protect against the hazards of residual radiological contamination from induced gamma rays and fallout. However, it gives some protection because of complete body coverage. It will reduce the chance of beta particles coming in contact with skin and causing burns, and it reduces the possibility of wearers ingesting alpha particles. This encapsulation also aids in simplifying decontamination.

Avoid contamination

When a monitoring team detects fallout, one of the members sounds an alarm. The NBC defense annex to the battalion SOP will tell what kind of alarm to use. The commander ensures that an NBC-4 report is given to the S2/S3. Personnel take cover and stay there until the all-clear is given or until they are told to move. After the all-clear, the commander sees that personnel, food, water, and equipment are monitored with a radiac set to check for contamination. Soldiers and equipment must be decontaminated.

Biological Defense

Biological agents may cause death or long-term disability. These attacks are hard to detect. See FM 3-100.

- Before Attack. The commander sees that soldiers stay healthy, get enough rest, and keep high standards of personal hygiene. If possible, personnel should be immunized against diseases that may be caused by biological agents. Soldiers should wear protective clothing. They should eat and drink only approved food and beverages. They should also treat cuts and wounds, no matter how small. The need for good field sanitation, including pest control, should be stressed.

- During Attack. As soon as the alarm for an attack is noticed, soldiers should put on protective masks and gloves. A biological attack should be suspected when low-lying aircraft producing a mist or spray, or any other spray device, is seen operating in the area. Bomblets that seem to have no immediate effect or swarms of insects not native to the area, or that appear soon after aircraft have been in the area, are other indications. If many people are sick for no known reason, this may be due to biological agents.

- After Attack. Soldiers keep their masks on until the commander tells them to unmask. Soldiers may decontaminate themselves and their clothing with soap and water. They should use germicidal soap if available. Sunlight usually decontaminates unshaded areas. If large areas or buildings need to be decontaminated, the commander informs the battalion S3 so that needed support can be requested. Food and water should not be used until determined to be safe. All illnesses should be reported to medical personnel. They may be able to identify the agents used in the attack and keep the disease from spreading through the unit.

Chemical Defense

Protective clothing and equipment must be worn in defense against chemical attack. The mission-oriented protective posture is a system used to indicate which protective clothing should be worn. The MOPP may vary from no protection to full protective clothing and equipment. It is based on the chemical threat, the mission work rate, and the temperature. The S2/S3 analyzes these factors and recommends the MOPP level for the battalion commander's approval. Instructions on the MOPP are usually provided in an annex to the SOP. They tell what variations may be

made and when the MOPP must be followed with no variations. FM 3-100, Chapter 3, gives more details on the use of the MOPP. See FM 3-4, Appendix A, Table 12, for performance degradation data for combat service support units in a chemical warfare environment. The commander must remember that, no matter what the conditions, the accomplishment of the mission comes first.

- Before Attack. The commander should know the MOPP and variations allowed. When the chemical threat is constant, soldiers may need to wear protective clothing longer. If soldiers' jobs keep them from wearing full protective gear, they must stay alert and be aware of the threat. It usually takes longer to put on the clothing than it does to receive a fatal dose of a chemical agent. The commander sees that soldiers understand signals and alarms and react to them quickly. They should cover themselves and their equipment before going to sleep. The commander sets decontamination priorities (soldiers first, then mission-essential equipment). He organizes standby decontamination stations, prepares protective shelters, and direct drivers to park their vehicles under foliage or trees. He designates detection teams to survey contaminated areas and establishes an evacuation plan for casualties. Soldiers should be trained to recognize and report attacks and hazards. They also need training in gas mask procedures. The commander holds frequent gas mask drills and provides first aid and self-aid training to everyone. Chemical agent detection kits should be inventoried for completeness and issued as needed. Ample quantities of decontaminating agents should be stocked. These are authorized by CTA 50-970.

- During Attack. The first person to recognize a chemical attack puts on his mask and gives the alarm. Alerted soldiers mask immediately, cover themselves with ponchos or shelter halves to protect against chemical droplets or sprays, and continue the mission. As soldiers work, they watch for nerve agent poisoning and use antidotes if symptoms appear.

- After Attack. After the attack, soldiers do not unmask unless given the order. They may not take food or water until the commander approves. Personnel may continue to do their jobs. First aid should be given to the wounded; casualties are reported IAW the SOP. Exposed skin should be decontaminated immediately. Clothing and equipment should be checked for contamination. Items that must be handled, such as weapon hand guards, telephone headsets, and radio microphones, should be checked first, then other equipment. Most items can be decontaminated with soap and water or with the M13 decontaminating kit. Some items should be replaced through the exchange procedure.

Contaminated Areas

The unit may have to cross a contaminated area. If the area is marked, it will be marked as shown in Figure 6-4. If the unit must cross a contaminated area, the following precautions will ensure minimum danger. Soldiers sh~~ou~~ld

- Use all the protective equipment that will stop chemical or biological agents from getting on or into their bodies.

- Travel upwind of the contamination.

- Avoid low places where chemical or biological agents may collect.

- Avoid contact with debris, buildings, woods, shrubbery, tall grass, and puddles, which tend to retain contamination.

- Cross as fast as they can. The less time they stay in the area, the less effect the contamination will have on them.

- Shield their vehicles from contamination. Place sandbags on the floors. Go as fast as they can safely go.

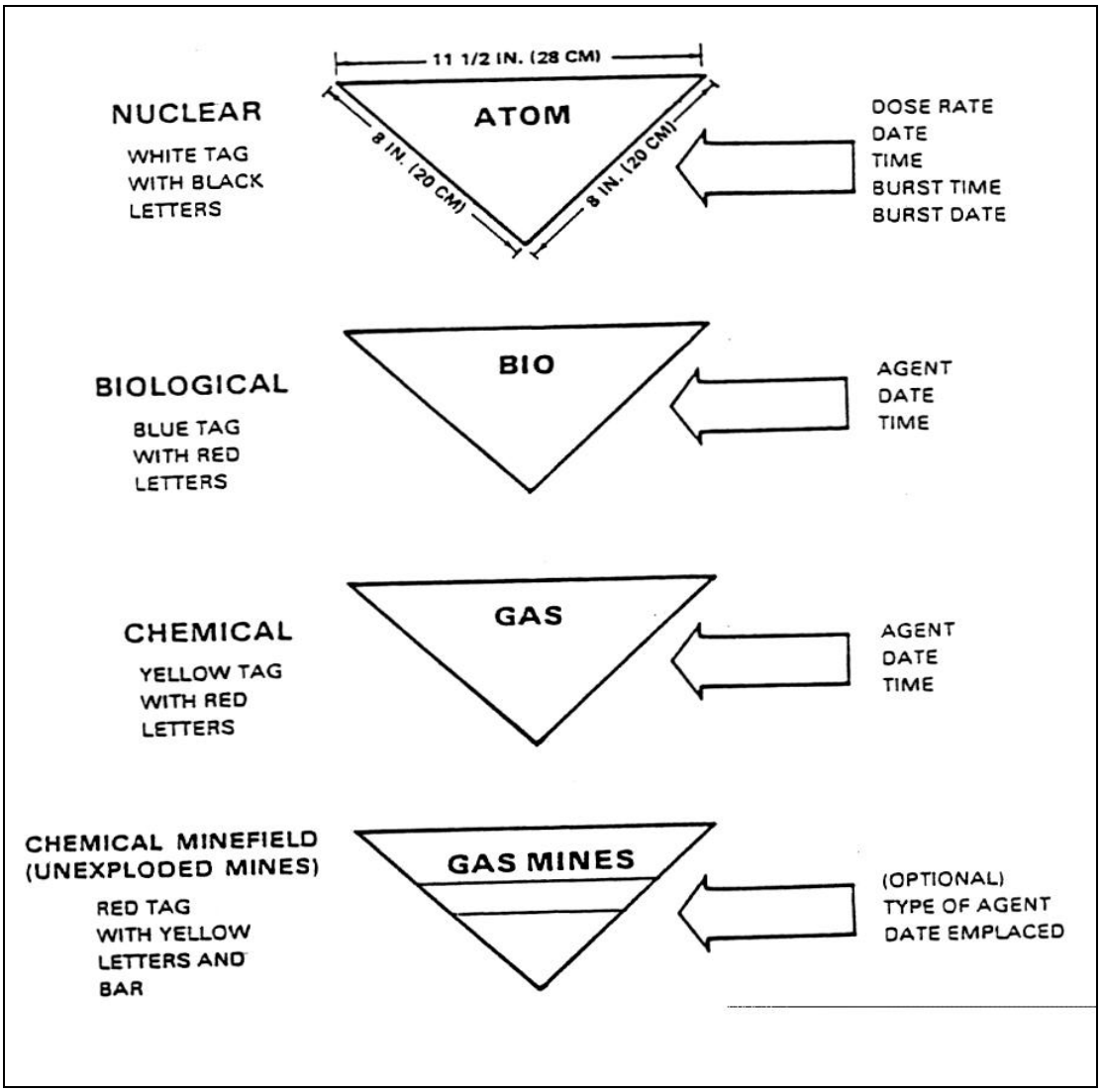

Figure 6-4. Marking of contaminated land areas